

## Environmental Protection Agency

## Pt. 60, App. A-7, Meth. 25A

report the results using both sets of calibration data (i.e., data determined prior to the test period and data determined following the test period).

NOTE: Note on the recording chart periods of process interruption or cyclic operation.

### 9.0 Quality Control

Method section	Quality control measure	Effect
8.4 .....	Zero and calibration drift tests .....	Ensures that bias introduced by drift in the measurement system output during the run is no greater than 3 percent of span.

### 10.0 Calibration and Standardization

10.1 FIA equipment can be calibrated for almost any range of total organic concentrations. For high concentrations of organics (> 1.0 percent by volume as propane), modifications to most commonly available analyzers are necessary. One accepted method of equipment modification is to decrease the size of the sample to the analyzer through the use of a smaller diameter sample capillary. Direct and continuous measurement of organic concentration is a necessary consideration when determining any modification design.

#### 11.0 Analytical Procedure

The sample collection and analysis are concurrent for this method (see Section 8.0).

#### 12.0 Calculations and Data Analysis

12.1 Determine the average organic concentration in terms of ppmv as propane or other calibration gas. The average shall be determined by integration of the output recording over the period specified in the applicable regulation. If results are required in terms of ppmv as carbon, adjust measured concentrations using Equation 25A-1.

$$C_c = K C_{\text{meas}} \quad \text{Eq. 25A-1}$$

Where:

$C_c$  = Organic concentration as carbon, ppmv.

$C_{\text{meas}}$  = Organic concentration as measured, ppmv.

K = Carbon equivalent correction factor.

= 2 for ethane.

= 3 for propane.

= 4 for butane.

= Appropriate response factor for other organic calibration gases.

### 13.0 Method Performance

13.1 Measurement System Performance Specifications.

13.1.1 Zero Drift. Less than  $\pm 3$  percent of the span value.

13.1.2 Calibration Drift. Less than  $\pm 3$  percent of span value.

13.1.3 Calibration Error. Less than  $\pm 5$  percent of the calibration gas value.

#### 14.0 Pollution Prevention [Reserved]

#### 15.0 Waste Management [Reserved]

### 16.0 References

1. Measurement of Volatile Organic Compounds—Guideline Series. U.S. Environmental Protection Agency. Research Triangle Park, NC. Publication No. EPA-450/2-78-041. June 1978. p. 46-54.

2. EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards. U.S. Environmental Protection Agency, Quality Assurance and Technical Support Division. Research Triangle Park, N.C. September 1993.

3. Gasoline Vapor Emission Laboratory Evaluation—Part 2. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Research Triangle Park, NC. EMB Report No. 75-GAS-6. August 1975.